

**Al-Farabi Kazakh National University, Kazakhstan
Institute of Computational Technologies of SB RAS, Russia
National Engineering Academy of the Republic of Kazakhstan, Kazakhstan
High Performance Computing Center in Stuttgart (University of Stuttgart), Germany
University of Pristina in Kosovska Mitrovica, Serbia
Abu Dhabi University, UAE
Novosibirsk National Research State University, Russia
Novosibirsk State Technical University, Russia
Siberian State University of Telecommunications and Information Sciences, Russia
Institute of Information and Computational Technologies, Kazakhstan**

P R O G R A M

International Conference “Computational and Informational Technologies in Science, Engineering and Education”

**September 24-27, 2015
Almaty, Kazakhstan**

24-27 September, 2015

PROCEDURE OF THE CONFERENCE (Program Overview)

Time Limit:

20-25 minutes for speakers at the Plenary Session including a discussion

10-15 minutes for speakers at Section Sessions including a discussion

Thursday, 24 September 2015

Arrival of the congress participants. International participants will be met at the airport. Checking-in at a hotel.

Friday, 25 September 2015

Al-Farabi KazNU

Department of Mechanics & Mathematics, Block 10, Red Hall

07.30-08.00	Private breakfast
08.00-08.30	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
08.30-09.00	Registration of the Conference participants
09.00-09.30	Opening Ceremony

Rector of Al-Farabi KazNU, academician Galimkair M. Mutanov opens the Conference.

A welcoming speech of the director of the Institute of Computational Technologies SB RAS, academician Yuri I. Shokin.

A welcoming speech of the professor Kyrgyz State Technical University named after I. Razzakov, academician Amanbek J. Jaynakov.

A welcoming speech of the professor of the University of Pristina in Kosovska Mitrovica Hranislav Milosevic.

09.30-10.50	The First Plenary Session
10.50-11.20	Coffee break
11.20-12.20	The First Plenary Session
12.30-14.30	Lunch
14.30-16.00	Section Sessions
16.00-16.30	Coffee break
16.30-18.30	Section Sessions
19.00	Conference banquet

Saturday, 26 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics, Block 10, Red Hall

08.00-09.30	Private breakfast
09.30-10.00	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
10.00-11.00	The Second Plenary Session
11.00-11.30	Coffee break
11.30-13.00	The Second Plenary Session
13.00-14.00	Lunch
14.00-16.00	Section Sessions
16.00-16.30	Coffee break
16.30-18.00	Section Sessions
18.00-18.30	Closing Ceremony. Red Hall
19.00	Farewell cocktail

**The training seminar «Modern programming models using newest Intel
software and hardware tools» within the framework of the Conference**

10.00-17.00 Department of Mechanics & Mathematics, Room 201

Sunday, 27 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics

08.00-08.30	Private breakfast
08.30-09.00	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
09.00-15.00	Cultural Program.

Departure of Participants

CONGRESS SCHEDULE

Thursday, 24 September 2015				
Guests arrival				
Friday, 25 September 2015				
08.30-09.00	Registration of Participants. Al-Farabi KazNU, Department of Mechanics & Mathematics, Blok 10, Red Hall			
09.00-09.30	Opening Ceremony. Red Hall.			
09.30-10.50	The First Plenary Session. Red Hall.			
10.50-11.20	Coffee break			
11.20-12.20	The First Plenary Session. Red Hall.			
12.30-14.30	Lunch .“Ai-Tumar” Catering Hall (University Campus)			
14.30-18.30	Section sessions. Department of Mechanics & Mathematics of Al-Farabi KazNU			
16.00-16.30 Coffee break	Section 1. High performance computing , room 213			
	Section 2. Information management, processing and security, Block 10, room 3			
	Section 3. Mathematical modeling of technological processes			
	Subsection 3.1 Red Hall	Subsection 3.2 Block 10, room 4	Subsection 3.3 Block 10, room 5	Subsection 3.4 Block 10, room 6
	Session 4. New information technologies in education, room 309			
	Session 5. Technological process automation and control, Block 10, room 2			
19.00	Conference Banquet.“Ai-Tumar” Catering Hall (University Campus)			
Saturday, 26 September 2015				
10.00-13.00	The Second Plenary Session. Department of Mechanics & Mathematics of Al-Farabi KazNU.			
11.00-11.30 Coffee break	Red Hall.			
13.00-14.00	Lunch.“Ai-Tumar” Catering Hall (University Campus)			
14.00-18.00	Section sessions. Department of Mechanics & Mathematics of Al-Farabi KazNU.			
16.00-16.30 Coffee break	Section 2. Information management, processing and security. Block 10, room 3			
	Section 3. Mathematical modeling of technological processes			
	Subsection 3.5 Red Hall	Subsection 3.6 Block 10, room 4	Subsection 3.7 Block 10, room 5	
	Session 5. Computational Mathematics, Block 10, room 2			
10.00-17.00	The training seminar «Modern programming models using newest Intel software and hardware tools» within the framework of the Conference. Department of Mechanics & Mathematics, room 201.			
18.00-18.30	Closing Ceremony. Red Hall.			
19.00	Farewell Coctail. “Ai-Tumar” Catering Hall (University Campus)			
Sunday, 27 September 2015				
09.00-15.00	Cultural Program.			
Departure of the Participants				

S E S S I O N S

Friday, 25 September 2015

Al-Farabi KazNU

Department of Mechanics & Mathematics, Block 10, Red Hall

Opening Ceremony

09.00-09.30

1. Session opening by the academician, Rector of Al-Farabi KazNU Galimkair M. Mutanov.
2. Welcoming speech by the director of the Institute of Computational Technologies SB RAS, academician Yuri I. Shokin.
3. Welcoming speech by the professor of the Kyrgyz State Technical University named after I. Razzakov, academician Amanbek J. Jaynakov.
4. Welcoming speech by the professor of the University of Pristina in Kosovska Mitrovica Hranislav Milosevic.

The First Plenary Session

09.30-12.20

Chair: Yu.I. Shokin

Secretary: A. Kudaibergenov, Zh. Akhmetova

Lecturers:

- | | |
|--------------------|---|
| 09.30-09.50 | Bychkov I. V Technologies of heterogeneous programming systems integration in the informational computing environment of mathematical modeling and data analysis (<i>Matrosov Institute for System Dynamics and Control Theory (ISDCT) of SB RAS, Irkutsk, Russia</i>) |
| 09.50-10.10 | Peyman Givi. Quantum Computing and Its Potential for Turbulence Simulations (<i>University of Pittsburgh Pittsburgh, Pennsylvania, USA</i>) |
| 10.10-10.30 | Sergey Kabanikhin. The size of the domain of measurements is the regularization parameter in continuation problem (<i>Institute of Computational Mathematics and Mathematical Geophysics SB RAS Novosibirsk, Russia</i>) |
| 10.30-10.50 | Andreas Griewank. Nonsmooth Numerics via Piecewise Linearization (<i>Humboldt University, Berlin, Germany</i>) |

24-27 September, 2015

10.50-11.20

Coffee break

11.20-11.40

Alexander V. Avdeev. Intel software for solving research and industrial problems: Modern trends of high performance computing (*Software and Services Group, Novosibirsk, Russia*)

11.40-12.00

Simon Jayaraj. Modeling and Simulation of Fluid Flow and Mixing in Micro Channels Using Immersed Boundary Method (*National Institute of Technology, Calicut, India*)

12.00-12.20

Christophe Josserand. Numerical simulation of multiphase flows (*Institut D'Alembert, CNRS & UPMC, Paris, France*)

12.30-14.30

Lunch

Section Sessions

Section 1. High Performance Computing

Room 213

14.30-18.30

16.00-16.20

Coffee break

Chair: V.P. Ilyin

Secretary: A. Sergaliyev, A. Əldibekova

Lecturers:

1. **Baidaliyev A., Akhmedov D., Yelubayev S., Bopeyev T., Muratov D.** Development of control and diagnostic system of cluster hybrid computing system (*Institute of Space Technique and Technologies AALR , Almaty, Kazakhstan*)
2. **Bedelbaev A.A.** Computer mathematical and biochemical modeling and simulation of the life processes in human kidneys (*Research Institute of Mathematics and Mechanics, Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
3. **Bychkov I.V., Kochemazov S., Manzyuk M., Otpuschennikov I., Posypkin M., Semenov A., Zaikin O.** Solving Hard SAT Instances in Volunteer Computing Project SAT@home (*Institute for System Dynamics and Control theory of SB RAS, Irkutsk, Russia*)
4. **Daribaev B., Urmashiev B.A** High-performance mobile computing of heat convection problems (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
5. **Karavaev D., Glinsky B., Kovalevsky V.** Scalable parallel algorithm for 3D seismic simulation on clusters with Intel Xeon Phi coprocessors (*Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*)
6. **Masich G.F., Masich A. G., Shchapov V.A.** Distributed PIV: the Technology of Processing intensive experimental data-flow on a remote Supercomputer (*Institute of Continuous Media Mechanics UB RAS, Perm, Russia*)
7. **Mukimbekov M.Zh, Baitulenov Zh.B., Nakibayeva M.T.** About one problem of oil production (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
8. **Mukimbekov M.Zh, Baitulenov Zh.B., Nakibayeva M.T.** Research of the reservoir parameters restoration problem (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
9. **Pyrkova A.Yu., Ivashchenko A.T., Berillo O.A.** Parallelization of algorithm of prediction of miRNA binding sites in mRNA on the cluster computing platform (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
10. **Yakimenko A. A., Grishchenko M.V.** The experience of implementation of

permutation tests using GPU (*Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*)

11. **Yakimenko A. A., Karavaev D., Belyashov A.** Seismic field simulation on high-performance computers in the problem of studying the consequences of underground nuclear tests (*Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*)
12. **Ильин В.П.** О фундаментальных и технологических проблемах математического моделирования (*Институт вычислительной математики и математической геофизики СО РАН, Новосибирский государственный университет, Новосибирск, Россия*)
13. **Смагин С. И., Каширин А.А., Талтыкина М.Ю.** Численное решение трехмерных задач акустики с использованием мозаично-скелетонного метода (*Вычислительный центр ДВО РАН, Хабаровск, Россия*)
14. **Шорников Ю.В., Насырова М.С., Достовалов Д.Н.** Анализ режимного поведения гибридных систем параллельными одношаговыми методами (*Конструкторско-технологический институт вычислительной техники СО РАН, Новосибирск, Россия*)

Section 2. Information management, processing and security

Block 10, Room 3

14.30-18.30

16.00-16.20 Coffee break

Chair: B.Y. Ryabko, N.Arsić

Secretaries: D. Kurmanbaev, Zh. Özgenbaeva

Lecturers:

1. **Aidarov K.A.¹, Balakaeva G.T.²** Admission control for server clusters based on QoS requirements (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Republican Institute for development of leading and research pedagogical staff of education system of the Republic of Kazakhstan, Almaty, Kazakhstan*)
2. **Akhmetov B.¹, Ivanov A.², Funtikova Yu.², Alibiyeva Zh.³** Multicriteria statistical analysis of test biometric data (¹*Ahmet Yesevi Turkish-Kazakh University, Turkestan, Kazakhstan*, ²*Penza State University, Penza, Russia*, ³*K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan*)
3. **Akhmetov B.¹, Kachalin S.², Bezyaev A.², Mukapil K.¹** Solving the inverse task of neural network biometrics without mutations and Jenkins' "nightmare" in the implementation of genetic algorithms (¹*Kazakh National Technical University named after K.I.Satpayev, Almaty, Kazakhstan*, ²*Penza Research Electrotechnical Institute, Penza, Russia*)
4. **Amirgaliyev E.N., Mamyrbayev O.J., Muratkhanova T.A.** Recognition of isolated words using the Bayes' theorem (*Institute of information and computing technologies, Almaty, Kazakhstan*)
5. **Amirgaliyev Y.N., Kalimoldayeva A.S.** Module of lexical and morphological analyzer in the development of semantic engine for kazakh language (*Institute of information and computing technologies, Almaty, Kazakhstan*)
6. **Andrianova A., Oleg Yakubailik O.** Usage of GIS technology in the analysis of spatial dynamics of hydrobiological data (Enisey river case study) (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)
7. **Arsi B.¹, Spalević P.², Bašić M.³, Arsić N.¹, Popović G.¹** Facebook profiles clustering (¹*Faculty of Science, University of Kragujevac, Kragujevac, Serbia*, ²*Faculty of Technical Sciences, Kosovska Mitrovica*, ³*Faculty of Sciences and Mathematics, Nis, Serbia*)
8. **Arslanov M.Z.** Polynomial algorithm for multiprocessor scheduling problem with three job lengths (*Institute of information and computing technologies, Almaty, Kazakhstan*)
9. **Bakiyeva A.M., Batura T.V., Fedotov A.M.** Methods and Systems of automatic Text Summarization (*Novosibirsk State University, Novosibirsk, Russia*)
10. **Baklanova O.E., Baklanov A.E., Shvets O.Ya.** Design of Automated Image Recognition System to Assess the Quality of the Mineral Species using CASE

- Technology (D. Serikbayev East Kazakhstan state technical university, Ust-Kamenogorsk, Kazakhstan)
11. **Biyashev R.G., Kalimoldaev M.N., Nyssanbayeva S.E., Kapalova N.A., Khakimov R.A.** Software Implementation of the Cryptographic System Models Protection With the Given Cryptostrength (*Institute of Information and Computational Technologies MES RK, Almaty, Kazakhstan*)
 12. **Biyashev R.G., Nyssanbayeva S.E., Begimbayeva Ye.Ye.** A modification of the digital signature algorithm based on modular arithmetic (*Institute of Information and Computational Technologies MES RK, Almaty, Kazakhstan*)
 13. **Erzin A., Mladenovic N., R. Plotnikov R.** VNS-based heuristics for Communication Tree Optimal Synthesis Problem in Wireless Sensor Networks (*Ledas Ltd, Novosibirsk, Russia*)
 14. **Erzin A., Shabelnikova N., Osotova L., Amirgaliyev Ye.** Wireless sensor networks and computational geometry problems (*Sobolev Institute of mathematics of SB RAS, Novosibirsk, Russia*)
 15. **Guskov A.E., Ryabko B.Y., Zubkov A.V.** Classification of scientific documents based on the compression methods (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
 16. **Ilic M.¹, Spalevic Z.², Spalevic P.¹, Arsic N.², Veinovic M.².** PayPal e-commerce and e-payment - problems and solutions (¹*Faculty of Technical Science Kosovska Mitrovica, University of Pristina in Kosovska Mitrovica, Belgrade, Serbia*, ²*Singidunum University, Belgrade, Serbia*)
 17. **Ilić S.¹, Obradović S.², Arsić N.¹, Petrović V.²** One implementation of the embedded database protection (¹*University of Pristina in Kosovska Mitrovica, Singidunum University, Belgrade, Serbia*, ²*The School of Electrical and Computer Engineering in Belgrade, Serbia*)
 18. **Imanbayev K.** Training radial basis neural networks in making Stok's equations (*Almaty Technological University, Almaty, Kazakhstan*)
 19. **Ismailylov A.** The management of biotechnological production (*Almaty Technological University, Almaty, Kazakhstan*)
 20. **Kadochnikov A., Tokarev A., Yakubailik O.** Environmental research software tools and services of Geoportal of ICM SB RAS (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)
 21. **Karibayeva A., Abakan M., Amirova D.** Choosing the model for solving the problem of lexical selection for Kazakh language on free/open-source platform Apertium (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
 22. **Kenshimov Ch., Amirgaliyev B., Kairanbay M., Kuatov K.** Object Recognition and Categorization Based on Hierarchical Temporal Memory (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
 23. **Kompaniets L.A., Iakubailik T.V.** Three-dimensional hydrophysical numerical model of Lake Shira: regular computations based on the input data resulting from natural observations (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)
 24. **Kurmangaliyeva V., Takibayeva M., Takibayev N., Aikawa M.** The construction of database and compilation tools for nuclear reaction data at the Central Asian Nuclear Reaction Data Centre (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

25. **Mansurova M., Alimzhanov E., Dadykina E.** Parallel algorithm of RDF data compression and decompression based on MapReduce Hadoop technology (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
26. **Milan Bašić.¹, Arsić B.²** A novel approach of statistical data manipulation by using some clustering methods (¹*Faculty of Sciences and Mathematics, University of Niš, Serbia*, ²*Faculty of Science, University of Kragujevac, Kragujevac, Serbia*)
27. **Montusiewicz J., Milosz M., Kayumov R.** 3D Computer Technologies as a Tool for Contemporary Archeology (*Lublin University of Technology, Lublin, Poland*)
28. **Mukasheva S.N., Toyshiev N.S., Kurmanov B.K., Sharipova G., Karmenova D.E.** Using GIM-technologies for monitoring of the ionosphere over Kazakhstan region (*Institute of Ionosphere, Almaty, Kazakhstan*)

Subsection 3.1. Mathematical Modeling of Technological Processes**Red Hall****14.30-18.00****16.00-16.20 Coffee break****Chair: S.I. Kabanikhin, S.G. Cherny****Secretaries: A. Kudaibergenov Askat, Zh. Abekerimova****Lecturers:**

1. **Abdibekova A.U., Zhumagulov B.T., Zhakebayev D.B.** Modelling of evolution small-scale magnetohydrodynamic turbulence depending on the magnetic viscosity of the environment (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
2. **Danaev N.T., Akhmed-Zaki D.Zh., Mukhambetzhano S.T., Imankulov T.S.** Mathematical modelling of oil recovery by polymer and surfactant flooding (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
3. **Dolgov D., Zakharov Yu.** Numerical Modeling of Artificial Heart Valve (*Kemerovo State University, Kemerovo, Russia*)
4. **Issakhov A.¹, Roidl B.², Meinke M.², Schröder W.²** Simulation of a transonic airfoil flow using a zonal RANS-LES Method (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Institute of Aerodynamics, RWTH Aachen University, Aachen, Germany*).
5. **Kabanikhin S.¹, Krivorotko O.²** Fast algorithm for calculation of the moving tsunami wave height (¹*Institute of Computational Mathematics and Mathematical Geophysics of SB RAS, Novosibirsk, Russia*, ²*Novosibirsk State University, Novosibirsk, Russia*).
6. **Kenzin M., Bychkov I., Maksimkin N.** Hybrid evolutionary approach to multi-objective mission planning for group of underwater robots (¹*Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia*).
7. **Kudaikulov A.¹, Josserand C.², Kaltayev A.¹** Theoretical and Numerical Prediction of the Permeability of Fibrous Porous Media (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Institut D'Alembert, CNRS & UPMC, Paris, France*).
8. **Mukanova B., Mirgalikzy T.** Solving the Direct Problem of Direct Current Electrical Sounding (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)
9. **Shokin Yu.I., Cherny S.G., Esipov D.V., Lapin V.N., Lyutov A.E., Kuranakov D.S.** Three-dimensional model of fracture propagation from the cavity caused by quasi-static load or viscous fluid pumping (*Institute of Computational Technologies of SB RAS, Novosibirsk, Russia*).
10. **Taseiko O.V.¹, Spitsina T.P.¹, Milosevic H.²** Self-purification modelling for small river in climate conditions of Central Siberia (¹*Siberian State Aerospace*

- University, Krasnoyarsk, Russia, Kosovo University, ²Kosovska Mitrovica, Serbia)*
11. **Toleukhanov A.¹, Kaltayev A.¹, Panfilov M.²** Analytical and numerical studies of the impact of growth kinetics, motion and chemotaxis of methanogenic bacteria on changes of the composition of hydrocarbon mixture in underground gas storages (*¹Al-Farabi Kazakh National University, Almaty, Kazakhstan, ²Lorraine University, Nancy, France*).
 12. **Zakharov Yu.¹, Zimin A.²** Two-Component Incompressible Fluid Model for Simulating Surface Wave Propagation (*¹Kemerovo State University, Kemerovo, Russia, ²Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
 13. **Alibayeva K., Kaltayev A.** Enhancement of the in-situ leach mineral mining process by the hydrodynamic method (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
 14. **Gorobchuk A.G.** Numerical model of plasma-chemical etching of silicon in CF₄/H₂ plasma (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
 15. **Khairtdinov M.S., Voskoboynikova G.M.** The numerical modeling of a posteriori algorithms for the geophysical monitoring (*Institute of Computational Mathematics and Mathematical Geophysics Siberian Branch RAS, Novosibirsk, Russia*)

Subsection 3.2. Mathematical Modeling of Technological Processes**Block 10, Room 4****14.30-18.00****16.00-16.20 Coffee break****Chair: E.A. Novikov, M.M. Aripov****Secretaries: B. Kalmurzaev, A. Valiolda****Lecturers:**

1. **Levykin A.I., Novikov E.A.** A study of (m,k)-methods for solving differential-algebraic systems of index 1 (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)
2. **Maussumbekova S., Beketaeva A.O.** Application of Immersed Boundary Method in Modelling of Thrombosis in The Blood Flow (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
3. **Temirbekov N.M., Baigereyev D.R.** Modeling of three-phase non-isothermal flow in porous media using the approach of reduced pressure (*D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan*)
4. **Aidossov A.A.¹, Aidossov G.A.¹, Danaev N.T.¹, Narbaeva S.M.¹, Zaurbekov N.S.²** Inverse equation for determination of anomalies field of gravity force by actual meteorological data (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Almaty Technological University, Almaty, Kazakhstan*)
5. **Akhmetov B.¹, Amanzholov T.¹, Tungatarova M.¹, Georgiev A.²** Modeling of solid liquid phase change process during charging of latent heat storage (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Technical University of Sofia - Branch Plovdiv, Plovdiv, Bulgaria*).
6. **Akpayev B.¹, Otelbaev M.¹, Hasanov A.A.²** Source identification problem related to mathematical model of laser surface heating. Numerical results (¹*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*, ²*Izmir University, Izmir, Turkey*)
7. **Alexeyeva L.A.** Generalized functions method in transport problems of elastodynamics (*Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan*)
8. **Amirgaliyeva E.¹, Kovalenko A.², Kovalenko A.³, Kozbakova A.³** Modeling of networks flows of grinshilds types (¹*Institute of Information and Computing technologies*, ²*Samara State University*, ³*K.I. Satpaev Kazakh National Technical University, Almaty, Kazakhstan*)
9. **Amirgaliyeva Zh.¹, Mladenovic N.²** New variable neighborhood search for bi-linear optimization (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*SASA, Belgrade, Serbia*).
10. **Aripov M.M., Rakhmonov Z.R.** On the asymptotics of solutions of heat transfer problems with sources and nonlinear boundary conditions (*National University of*

Uzbekistan, Tashkent, Uzbekistan)

11. **Askarbekov R.** Construction of mathematical model, compression of rubber-metal supports and behavior of rubber layer (*Kyrgyz State Technical University, Bishkek, Kyrgyzstan*)
12. **Assanova A.T.¹, Imanchiev A.E.²** About new algorithm for solving nonlinear three-point boundary value problem for system of differential equations (¹*Institute of Mathematics and Mathematical Modeling, Almaty*, ²*K. Zhubanov Aktobe Regional State University, Aktobe, Kazakhstan*)
13. **Bekbauov B.E.¹, Kaltayev A.¹, Baishemirov Zh.², Rakhymova A.²** Mass conservation and pressure equations for the sequential chemical compositional simulation (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Abai Kazakh National Pedagogical University, Almaty, Kazakhstan*).
14. **Belyayev Ye., Kaltayev A.** Numerical comparison of shear flow coherent structure using ENO FD scheme and DG method (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
15. **Belyayev Ye.¹, Kaltayev A.¹, Naimanova A.²** Numerical simulation of the combustion in a planar shear layer (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Institute of Mathematics and Mathematical Modeling Ministry of Education and Science Republic of Kazakhstan, Almaty, Kazakhstan*).
16. **Bereznev V.A.** An effective method for solving quadratic programming problems (*Computing Center of RAS, Moscow, Russia*).
17. **Bibossinov A.¹, Iskakbayev A.¹, Aleksandrov S.²** Mathematical modeling of influence of material microstructure to products formation processes (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Institute for problems in mechanics of RAS, Moscow, Russia*).
18. **Bismildin I.R.¹, Temirbekov Y.S.²** On the account of distributed inertia of rod mechanism in plane and spatial motion (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*, ²*Almaty Technological University, Almaty, Kazakhstan*).

Subsection 3.3. Mathematical Modeling of Technological Processes**Block 10, Room 5****14.30-18.00****16.00-16.20 Coffee break****Chair: G. S. Khakimzyanov, M.N. Kalimoldaev****Secretaries: B. Akhmetov, A. Gumarova****Lecturers:**

1. **Bokayev N.A.** On some properties of signals with finite Fourier-Walsh spectrum (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)
2. **Bychkov I.V., Oparin G.A., Feoktistov A.G., Bogdanova V.G., Pashinin A.A.** The simulation modeling technology of warehouse logistics processes in distributed computing environment (*Matrosov Institute for System Dynamics and Control Theory of Siberian Branch of Russian Academy of Sciences, Irkutsk, Russia*)
3. **Chanda A.** A study of isotropic turbulence with the help of vorticity (*University of Calcutta, Kolkata, India*)
4. **Dairbayeva S.¹, Belgibayev B.², Dairbayev A.¹, Bukesova A.²** Clarified process modeling of mudflow mass (¹*International Information Technologies University, Almaty, Kazakhstan*, ²*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
5. **Epov M., Shurina E., Shtabel E., Shtabel N.** The modeling of electromagnetic field for different types of source signals (*Institute of Petroleum Geology and Geophysics SB RAS, Novosibirsk, Russia*)
6. **Epov M.I., Shurina E.P., Mikhaylova E.I., Kutischeva A.Y.** The modifications of the multiscale finite element method for solving electromagnetic problems on the AC and DC (*Trofimuk Institute of Petroleum-Gas Geology and Geophysics of the Siberian Branch of the RAS, Novosibirsk State Technical University, Novosibirsk, Russia*)
7. **Glazyrina N., Mukanova B.** Mathematical modeling of technological process of preparation of water for thermal power plants (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)
8. **Ibrayev A.G.¹, Tyurekhojayev A.N.²** Bending vibration of drill string (¹*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*, ²*K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan*)
9. **Issakhov A.** Numerical study of the discharged heat water effect on the aquatic environment from thermal power plant (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
10. **Issakhov A., Khan Ye.** Mathematical modelling of detached flow around a car body by using Large eddy simulation method (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
11. **Jainakov A.J.¹, Kaleeva A.K.², Kurbanaliev A.I.²** Prediction of the flow around

- the building by the control volume method (¹Asanaliev Institute of Mining and Mining Technologies of the Razzakov Kyrgyz State Technical University, Bishkek, Kyrgyzstan, ²Kyzyl-Kiya Humanitarian Pedagogic Institute of the Batken State University, Kyzyl-Kiya, Kyrgyzstan)
12. **Josserand C., Zaleski S., Ray P., Popinet S., Jian Z.** Drop impact investigation using direct numerical simulations (*Institut D'Alembert, Paris, France*)
 13. **Kagenov A.M., Glazunov A.A., Eremin I.V.** Mathematical modeling of particle motion under the influence of spacecraft rocket engine supersonic jets in Mars environment (*National Research Tomsk State University, Tomsk, Russia*)
 14. **Kalimoldaev M.N.¹, Jenaliyev M.N.², Abdildayeva A.¹, Duzbayev T.¹** The problems of optimal control for electric power systems (¹Institute of Information and Computational Technologies, Almaty, Kazakhstan, ²Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan)
 15. **Kalimoldayev M.N.¹, Alexeyeva A.V.², Alimhan K.³, Amirkhanova G.A.¹** Economic soliton of the spatially two-dimensional nonlinear mathematical A1 model (¹Institute of Information and Computational Technologies, Almaty, Kazakhstan, ²Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan, ³L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)
 16. **Kalmenov T.Sh., Aripova G.D.** The Navier-Stokes problem in weighted spaces (*Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan*)
 17. **Karimov A.** Numerical solution of the one-dimensional problem of a non-Newtonian fluid filtration (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
 18. **Kenenbaeva G.** Computer modeling of phenomena in dynamical systems (*Institute of Theoretical and Applied Mathematics, NAS KR, Bishkek, Kyrgyzstan*)
 19. **Khairtdinov M.S.¹, Gubarev V.V.², Voskoboinikova G.M.¹, Seduhina G.F.¹** Informative Factors of Geophysical Fields Interaction in Problem of the Environmental Protection Prediction (¹Institute of Computational Mathematics and Mathematical Geophysics SB RAS, ²Novosibirsk, Russia, *Novosibirsk State Technical University, Novosibirsk, Russia*)
 20. **Кабанихин С.И.¹, Шолпанбаев Б.Б.²** Задача продолжения электромагнитных полей с части границы (¹Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия, ²Казахский национальный педагогический университет им. Абая, Алматы, Казахстан)

Subsection 3.4. Mathematical Modeling of Technological Processes**Block 10, Room 6****14.30-18.00****16.00-16.20 Coffee break****Chair: H. Milosevic , S.N. Kharin****Secretaries: A. Koldas, A. Tyrranbaeva****Lecturers:**

1. **Kharin S.N.¹, Kassabek S.²** Mathematical model of thermoelectric effects during bridge erosion of electrical contacts (¹*Kazakh-British Technical University, Almaty, Kazakhstan*, ²*Suleiman Demirel University, Almaty, Kazakhstan*)
2. **Khikmetov A.¹, Karzhaubayev K.²** Modelling pollution transport from the residual rocket fuel (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan*).
3. **Kim A., Shpadi Yu.** Mathematical Modeling of the Destruction Process in the Fault Zone (*JSC National Center of Space Researches and Technologies, Almaty, Kazakhstan*)
4. **Kisala P.¹, Wojcik W.¹, Kashaganova G.², Kalizhanova A.², Smailov N.²** Elongation determination using finite element and boundary element method (¹*Politechnika Lubelska, Lublin, Poland*, ²*K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan*)
5. **Koshanov B.** Conditions for solvability of correct boundary value problems for the inhomogeneous polyharmonic equation in a ball (*Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan*)
6. **Kuranakov D.S., Lapin V.N., Esipov D.V., Cherny S.G.** 3D model of fatigue crack propagation under cyclic loading (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
7. **Kuzmenko V., Yanchukovskiy V.** Density of temperature coefficients for muons in the atmosphere (*Geophysic service of SB RAS, Novosibirsk, Russia*)
8. **Kuzmenko V., Yanchukovskiy V.** Temperature effect of muons in the atmosphere (*Geophysic service of SB RAS, Novosibirsk, Russia*)
9. **Lapin V.N., Cherny S.G., Kuranakov D.S.** 3D model of fracture propagation caused by viscous compressible fluid pumping (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
10. **Madiyarov M.N.¹, Sailarbek S.²** Geoinformation System on the basis of mathematical model of the microclimate of the industrial city (¹*S. Amanzholov East Kazakhstan State University, Ust-Kamenogorsk, Kazakhstan*, ²*D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan*)
11. **Makasheva A.¹, Beketaeva A.¹, Belyayev Ye.²** Numerical simulation of the mixing in a planar shear layer (¹*Institute of Mathematics and Mathematical Modeling Ministry of Education and Science Republic of Kazakhstan, Almaty,*

- Kazakhstan, ²Al-Farabi Kazakh National University, Almaty, Kazakhstan).
12. **Milosevic H.¹, Rychkov A.D.², Kontrec N.¹, Taseiko O.V.³** The expected inaccuracy in measuring the temperature the expected inaccuracy in measuring the temperature profiles in solid propellant by thermocouple elements (¹Faculty of Science, Kosovo University, Kosovska Mitrovica, ²Institute of Computational Technologies of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia, ³Siberian State Aerospace University, Krasnoyarsk, Russia)
 13. **Moisseyeva Ye.¹, Naimanova A.², Beketaeva A.²** Non-uniform ENO Scheme for Simulation of Supersonic Flows (¹Al-Farabi Kazakh National University, Almaty, Kazakhstan, ²Institute of Mathematics and Mathematical Modelling, Almaty, Kazakhstan).
 14. **Munir B.¹, Urmashhev B.A.², Kavokin A.A.²** Computational model of thermo-diffusive processes in electrodes by arcing (¹GIK Institute of Engg.Sci.and Technology, Topi, Pakistan, ²Al-Farabi Kazakh National University, Almaty, Kazakhstan).
 15. **Muratbekov M.** The discreteness of the spectrum and the distribution of singular numbers (s-numbers) of a class of differential operators of mixed type (*Taraz State Pedagogical Institute, Taraz, Kazakhstan*)
 16. **Muratbekov M.B., Iginov S.** On separability of a class of differential operators in $L_2(\mathbb{R}^2)$ (*Taraz State Pedagogical Institute, Taraz, Kazakhstan*)
 17. **Nursultanov E.D.¹, Tleukhanova N.T.²** Recovery operator of periodic functions (¹Lomonosov Moscow State University (Kazakh Branch), Astana, Kazakhstan, ²L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)
 18. **Ospanov K.N., Zulkhazhav A.** Coercive estimates for a solution of the system of the second order difference equations (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)
 19. **Ospanov K.N., Akhmetkaliyeva R.D.** On the second order differential equation with damped term (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)
 20. **Shaimardan S.** Weighted estimate of q-integral operator with a logarithmic singularity (*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*)

Section 4. New Information Technologies in Education**Room 309****14.30-18.00****16.00-16.20 Coffee break****Chair: Z. K. Yuldashev, V.B. Barakhnin****Secretaries: J. Imanova, A. Mukhtarova****Lecturers:**

1. **Ashurova D.N., Yuldashev Z. K., Raimova M.U., Yuldasheva M.A.** Concepts of activization of Ttrainees within Structural Model of education (*National University of Uzbekistan, Tashkent, Uzbekistan*)
2. **Bekbolatov Y., Kartbayev Amandyk.** Kazakh Morphological Analysis for Statistical Machine Translation: A Case Study (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
3. **Mansurova M., Pyrkova A.Yu., Alimzhanov E.** Design and development of online courses on edX platform (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
4. **Mansurova M., Nugumanova A., Zyryanov D.** A concept map approach to supporting adaptive e-Learning (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
5. **Petrovic V.V., Grujic A., Jokic A** Positive practice in the implementation of Moodle in e-learning (*The School of Electrical and Computer Engineering of Applied Studies, Belgrade, Serbia*)
6. **Satybaldiyeva R. Zh., Moldagulova A.N., Nuralin Y., Duisenbayev N., Saktaganova A., Yelibay A., Mailybek M.** About Development of the Technology Radar in Kazakhstan (*International Information Technology University, Almaty, Kazakhstan*)
7. **Shayakhmetova B.K., Omarova S.E. Omarov G.T., Orumbaeva N.T.** Structuralization of pedagogical categories "knowledge" in the process of society informatization (*Karaganda State University, Karaganda, Kazakhstan*)
8. **Skopin I.N.** An approach to teaching programming (*Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*)
9. **Tukeyev U., Rakhimova D., Kartbayev A., Zhumanov Z.** Combinational circuits model of Kazakh and Russian languages morphology (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
10. **Urmashev B.A., Pyrkova A.Yu., Mansurova M., Makashev Y., Burlibayev A.Zh., Sarsembayev M.** Database design for the sectoral frame of IT qualications within TEMPUS project "QUADRIGA" (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
11. **Баракнин В.Б., Кожемякина О.Ю., Забайкин А.В.** Технология создания метрических справочников и конкордансов русских поэтических текстов

(Институт вычислительных технологий СО РАН, Новосибирский государственный университет, Новосибирск, Россия)

12. **Казаков В. Г., Щеглов Ю.А., Казаков В.В., Носков И.В.** ML-Studio – Web приложение для создания и применения мультимедиа лекций *(Новосибирский государственный университет экономики и управления Новосибирск, Россия)*

Section 5. Technological Process Automation and Control**Block 10, Room 2****14.30-18.00****16.00-16.20 Coffee break****Chair: I.V. Bychkov, Z.N. Murzabekov****Secretaries: P. Omarova, G. Kaliyeva****Lecturers:**

1. **Abdoldina F.N., Umirova G.K., Berlibayeva Assem.** Automation of data geodynamic monitoring on an oil and gas field (*Kazakh National Technical University after K.I.Satpayev, Almaty, Kazakhstan*)
2. **Akhmed-Zaki D.Zh., Matkerim B., Mansurova M., Dadykina E.** An approach to the development of distributed applications for oil extraction problems (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
3. **Davydov A., Larionov A., Terekhin I.** Synthesis of plans in multi-agent system using the method of positively constructed formulas (*Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia*)
4. **Djosic D., Stefanovic C., Aleksic D., Zdravkovic S., Dinic I.** Level crossing rate of dual - random composite process in the presence of Rician distributed interference (*Faculty of Natural Sciences and Mathematics at University of Pristina, Serbia*)
5. **Jayaraj S., Belyayev Ye. Kaltaev A., Lokesh P.** Analysis of a Direct Expansion Solar Assisted Heat Pump Suitable for Comfort Applications (*National Institute of Technology, India, Al-Faraby Kazakh National University, Almaty, Kazakhstan*)
6. **Kairanbay M. Zh., Amirgaliyev B., Kenshimov S., Kumatov K., Baibatyr Z., Zhantasov A.** Algorithm for Recognition of Kazakhstan Vehicle License Plates (*ABY Applied Systems, Almaty, Kazakhstan*)
7. **Kalimoldayev M.N., Islamgozhayev T.U., Zholmyrzayev A.K. Mazhitov Sh.S.** Design and development of mobile remote controlled robotic platform (*Institute of Information and Computational Technologies, Almaty, Kazakhstan*)
8. **Kisala P., Wojcik W., Kashaganova G., Kalizhanova A., Kussambayeva N., Yussupova G.** Analysis of the possibilities for using a uniform Bragg grating in a tunable dispersion compensator (*Politechnika Lubelska, Lublin, Poland*)
9. **Lutovac M., Spalevic P., Arsic Nebojsa.** Raspberry Pi, Mathematica, and electrical engineering education (*Faculty of Technical Science Kosovska Mitrovica, University of Pristina in Kosovska Mitrovica*)
10. **Molorodov Y.I., Zelenchuk A.M.** The conception and architecture of the Internet portal for the study of thermophysical properties of materials (*Institute of computational technologies SB RAS, Novosibirsk, Russia*)

11. **Musabekov N.R., Utepbergenov I.T., Kasymova D.T., Muslimova A.K., Utegenova A.O.** Integrated Approach for Implementing the Virtual Information Infrastructure of the automated process control system (*Kazakh National Technical University named after K. Satpayev*)
12. **Mustafin S., Zeinullina A., Mussina Z.** About the determination of optimal trajectory condition of stowage material (*Institute of information and computational technologies, Almaty, Kazakhstan*)
13. **Nagul N.V.** Discrete-event systems with state observation properties studying (*Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia*)
14. **Мурзабеков З.Н.** Оптимизация непрерывных линейных систем с ограниченным управлением. (*Казахский национальный университет им. Аль-Фараби, Алматы, Казахстан*)
15. **Крученецкий В.З., Вязигин С.В., Сериккулова Ж.К., Крученецкий В.В.** Беспроводная интеллектуальная среда измерения, передачи и обработки сведений о характеристиках материалов, изделий (*Almaty Technological University, Almaty, Kazakhstan*)

Saturday, 26 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics

The Second Plenary Session
Block 10, Red Hall

10.00-13.00

Chair: M.A. Bektemesov

Secretary: A. Kudaibergenov, Zh. Akhmetova

Lecturers:

10.00-10.20 **Darkhan Zh. Akhmed-Zaki.** Information system for oil recovery analysis (*Al-Farabi Kazakh National University Almaty, Kazakhstan*)

10.20-10.40 **Gayaz S. Khakimzyanov.** On Some Problems of Numerical Modelling of Surface Waves in the Framework of the Shallow Water Model (*Institute of Computational Technologies SB RAS Novosibirsk, Russia*)

10.40-11.00 **Anvarbek M. Meirmanov.** Macroscopic Mathematical Models of Physical Processes in Porous Media via Microstructure (*Kazakh-British Technical University Almaty, Kazakhstan*)

Coffee break

11.00-11.30

11.30-11.50 **Oleg I. Potaturkin.** Spectral-Spatial Classification of the Earth Surface Types Using Hyperspectral Remote Sensing (*Institute of Automation and Electrometry of SB RAS Novosibirsk, Russia*)

11.50-12.10 **Boris Ya. Ryabko.** Optimization of the Internet Search Based on Laws of Information Theory and Psychology (*Institute of Computational Technologies SB RAS Novosibirsk, Russia*)

12.10-12.30 **Nickolay Y. Shaparev.** Modeling of absorption and transfer of radiation in an expanding sphere (*Institute of Computational Modelling SB RAS Krasnoyarsk, Russia*)

12.30-12.50 **Yury N. Zakharov.** Computational and Experimental Research of Soil Erosion at the Bottom of Gravity Platforms (*Kemerovo State University Kemerovo, Russia*)

13.00-14.00

Lunch

The training seminar «Modern programming models using newest Intel software and hardware tools» within the framework of the Conference
10.00-17.00, Department of Mechanics & Mathematics, Room 201

Section Sessions

Section 2. Information management, processing and security

Block 10, Room 3

14.00-18.00

16.00-16.20 **Coffee break**

Chair: Panić S., R.G. Biyashev

Secretaries: D. Kurmanbaev, Zh.Özgenbaeva

Lecturers:

1. **Mussabayev R.** Development of the Kazakh Text-to-Speech Synthesis System on the basis of Fujisaki intonation model (*Institute of Information and Computational Technologies, Almaty, Kazakhstan*)
2. **Nyssanbayeva S.E., Magzom M.M.** Modification of the encryption algorithm, developed on the basis of nonpositional polynomial notations (*RSE "Institute of Information and Computational Technologies" CS MES RK, Almaty, Kazakhstan*)
3. **Osipov A.L., Bobrov L.K.** Predict the properties of chemicals based on Intelligent Computer Systems (*Novosibirsk State University of Economics and Management, Novosibirsk, Russia*)
4. **Rakhmetullina S., Turganbayev Yr., Penenko A.** Information-analytical system "ECO Monitoring" (*East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan*)
5. **Rodionova Z.** Design of algorithms for automated access control based on business process approach (*Novosibirsk State University of Economics and Management, Novosibirsk, Russia*)
6. **Sarsembayev M., Amyrgaliev E., Sarsembayeva T.** Algorithms and methods of searching motion in dynamic images (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
7. **Savic A.¹, Kalemi E.², Dëra M.³** A case study of a Knowledge Management System (¹*School of Electrical Engineering and Computer Science applied studies, Belgrade Serbia,* ²*Faculty of Economy, University of Tirana, Albania,* ³*Faculty of Mathematics Engineering and Physics Engineering, Polytechnic University of Tirana, Albania*)
8. **Shokin Yu.I., Fedotov A.M., Zhizhimov O.L., Barakhnin V.B.** The technology of creating large-scale intelligent information and analytical search engines in semistructured data (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)
9. **Sundetova A., Abduali B., Zhanbussunov N., Musabekova Zh.** Study of the problem of creating structural transfer rules for the Kazakh - English and Kazakh-Russian machine translation systems on Apertium platform (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

10. **Vučković D., Panić S., Milosevic H., Đošić D.** Performance analysis of wireless transmission channels in the presence of eta-mu fading and kappa-mu co-channel interference (*Faculty of Sciences, University of Pristina, Kosovska Mitrovica, Serbia*)
11. **Yakubailik O.** Development of geospatial software for environmental monitoring problems (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)
12. **Zhantaeyev Zh., Kim A., Ivanchukova A., Junisbekova V., Turgumbayev A.** Movements of earth's surface in source zones of Northern Tien Shan by satellite data (*JSC National center of space researches and technologies, Almaty, Kazakhstan*)
13. **Амиргалиев Е.Н., Касымбеков А.М.** Разработка алгоритма распознавания образов и классификация на базе группового синтеза (*Институт информационных и вычислительных технологий, Алматы, Казахстан*)
14. **Амиргалиев Е.Н., Юнусов Р.** Системы распознавания образов в задачах автоматизации распознавания паспортных данных (*Институт информационных и вычислительных технологий, Алматы, Казахстан*)
15. **Бияшев Р.Г., Калимолдаев М.Н., Рог О.А.** Логический подход к организации многокритериального атрибутивного разграничения доступа (*Институт информационных и вычислительных технологий, Алматы, Казахстан*)
16. **Бычков И.В., Ружников Г.М., Сидоров И.А., Сидоров И.А., Фёдоров Р.К., Потапов В.П.** Технологии интеграции разнородных программных систем в информационно-вычислительной среде математического моделирования и анализа данных (*Институт динамики систем и теории управления имени В.М. Матросова СО РАН, Иркутск, Россия*)
17. **Исмаил Е.Е.** Особенности и требования к качеству программных средств космического назначения (*Институт космической техники и технологий, Алматы, Казахстан*)
18. **Кадочников А.А.** Особенности разработки программно-технологического обеспечения для региональных геоинформационных веб-систем (*Институт вычислительного моделирования, Красноярск, Россия*)
19. **Пестунов И.А., Синявский Ю.Н., Рылов С.А., Мельников П.В., Дубровская О.А., Лазарев Д.В.** Технология использования разнородных данных при сегментации спутниковых изображений высокого разрешения (*Институт вычислительных технологий СО РАН, Новосибирск, Россия*)
20. **Платонов К.А.** Технологии извлечения количественной информации из геологических научных публикаций и сервисы их обработки (*Дальневосточный геологический институт ДВО РАН, Приморский край Россия*)
21. **Полякова А.П., Светов И.Е., Султанов М.А.** О задаче идентификации множества точек разрыва геометрических объектов по томографическим данным (*Университет им. Ахмеда Яссави, Туркестан, Казахстан*)
22. **Сантеева А.А., Жижимов О.Л.** О пользовательских интерфейсах для работы с тезаурусами и рубрикаторами в распределенных разнородных информационных системах на примере платформы ZooSPACE (*Новосибирский государственный университет, Новосибирск, Алматы*)

23. **Серикбаева Е. Виляев А.В., Жантаев З.С.** Опыт использования космических снимков Aster для решения геологических задач на примере Жезказганского рудного района (*Институт ионосферы, Алматы, Казахстан*)
24. **Симонов К.В., Курако М.А.** Вычислительная технология обработки данных комплексного мониторинга природных геообъектов (*Сибирский федеральный университет, Красноярск, Россия*)
25. **Скачков Д.М., Жижимов О.Л.** Интеграция географических метаданных в современные библиотечные системы (*Институт вычислительных технологий СО РАН, Новосибирск, Россия*)
26. **Скопин И.Н.** Системный подход к конструированию интерфейсов приложений (*Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия*)
27. **Токарев А.В.** Разработка подсистемы актуализации базовых пространственных данных по населенным пунктам Красноярского края (*Институт вычислительного моделирования СО РАН, Красноярск, Россия*)
28. **Шокин Ю.И., Веснин А.Ю., Добрынин А.А., Клименко О.А., Рычкова Е.В.** Математическое моделирование информационных процессов в веб-пространстве (*Институт вычислительных технологий СО РАН, Новосибирск, Россия*)

Subsection 3.5. Mathematical Modeling of Technological Processes**Red Hall****14.00-18.00****16.00-16.20 Coffee break****Chair: U.S. Abdibekov, A. Zh. Kaltayev****Secretaries: N. Shakhan, G. Kaliyeva****Lecturers:**

1. **Shishlenin M.A.** Regularization methods for multidimensional analog of Gelfand-Levitan-Krein equation (*Sobolev Institute of Mathematics of SB RAS, Novosibirsk, Russia,)*
2. **Shmygaleva T.A.¹, Kupchishin A.I.², Shmygalev E.V.¹, Jeleunova Sh.E.¹, Cherikbayeva L.Sh.¹, Masyrova I.D.¹, Alirakymov B.¹** Mathematical modelling of radiating processes in solids irradiated by heavy ions (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan,* ²*Abai Kazakh National Pedagogical University, Almaty, Kazakhstan).*
3. **Temirbekov N.M.¹, Malgazdarov E.A.², Tokanova S.O.¹** Comprehensive program for numerical simulation convective flow of viscous incompressible fluid a curvilinear coordinate system (¹*D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan,* ²*S. Amanzholov East Kazakhstan State University, Ust-Kamenogorsk, Kazakhstan,)*
4. **Tleubergenov M.I.¹, Azhymbaev D.T.²** On the construction of equations in the form of Lagrange, Hamilton and Birkhoff by the given properties of motion in the presence of random perturbations (¹*Institute of Mathematics and Mathematical Modeling MES RK, Almaty, Kazakhstan,* ²*K. Zhubanov Aktobe Regional State University, Aktobe, Kazakhstan)*
5. **Tyurekhojayev A.N.¹, Kalzhanova G.K.², Ibrayev A.G.³** Analytical solution of the problem about bending of annular plates subject to the action of the lateral load (¹*K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan,* ²*Ilyas Zhansugurov Zhetysu State University, Taldykorgan, Kazakhstan,* ³*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*
6. **Tyurekhojayev A.N.¹, Sergaziyev M.Zh.²** Propagation of nonlinear waves in a mechanical system with contact dry friction under the action of cyclic loads (¹*K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan,* ²*International Information Technologies University, Almaty, Kazakhstan)*
7. **Ybyraiymkul D.T.¹, Kaltayev A.¹, Ng K.C.²** Thermal behaviours of the absorbed natural gas storage (¹*Al-Farabi Kazakh National University, Almaty, Kazakhstan,* ²*National University of Singapore, Singapore, Singapore).*
8. **Yuldashev Z.Kh.¹, Ibragimov A.A.², Shominasov Sh.Sh.¹** Algorithms of determination by the path of robots in the conditions of interval uncertainty of data (¹*National University of Uzbekistan, Tashkent, Uzbekistan,* ²*Navoi State*

- Pedagogical Institute, Navoi, Uzbekistan)*
9. **Zhantayev Zh., Bibossinov A., Fremd A.** Using of geological and geophysical data in identifying of structurally homogeneous regions of the earth's crust in the case of Caspian region (*JSC National center of Space researches and technologies, Almaty, Kazakhstan*).
 10. **Zhumatov S.S.** On an instability of nonlinear controllable system in the neighborhood of program manifold (*Institut of mathematics and mathematical modeling MES RK, Almaty, Kazakhstan*).
 11. **Абдибеков У.С., Каржаубаев К.К.** Численное моделирование турбулентного конвективного переноса примеси при наличии температурной инверсии (*Казахский национальный университет имени аль-Фараби, Алматы, Казахстан*).
 12. **Ажиханов Н.Т., Жунисов Н.М.** Задача фильтрации жидкости к разноориентированной горизонтальной скважине в деформируемой трансверсально-изотропной среде (*Международный казахско-турецкий университет им. Х.А. Ясави, Туркестан, Казахстан*).
 13. **Азимов А.А.** Обратная задача лечения организма бактериостатическим антибиотиком с измерением общей численности бактерий (*Казахский национальный университет имени аль-Фараби, Алматы, Казахстан*).
 14. **Айменова К.А.¹, Иманбердиев К.Б.²** О некорректной задаче для уравнения Пуассона (*¹Институт математики и математического моделирования КН МОН РК, Алматы, Казахстан, ²Казахский национальный университет имени аль-Фараби, Алматы, Казахстан*).
 15. **Айпанов Ш.А., Мурзабеков З.Н.** Оптимальная стабилизация вращательного движения космического аппарата на конечном интервале времени (*Институт математики и механики КазНУ им. аль-Фараби, Алматы, Казахстан*).
 16. **Айтжан А.Б., Ыбырайымкул Д.Т.** Численное исследование процесса разрядки природного газа из терморегулируемого слоя адсорбента (*Казахский национальный университет им. аль-Фараби, Алматы, Казахстан*).
 17. **Алимова А.Н.** Численные методы решения задачи Дирихле для волнового уравнения (*Казахский национальный технический университет им. К.И. Сатпаева, Алматы, Казахстан*).
 18. **Арипов М., Матякубов А.** Асимптотическое поведение автомодельных решений нелинейных параболических систем нелинейного вида (*Национальный университет Узбекистана, Ташкент, Узбекистан*).
 19. **Ахмед-Заки Д., Сакабеков А., Аужани Е.** Численное решение трехмерной двухфазной фильтрационной задачи по идентификации параметров неоднородного нефтяного пласта (*Казахстанско-Британский технический университет, Алматы, Казахстан*).
 20. **Бекетаева А.О., Шахан Н.Ш.** Математическое моделирование ударно-волновых структур при взаимодействии скачков уплотнения с пограничными слоями нижней и верхней стенки (*Казахский национальный университет имени аль-Фараби, Алматы, Казахстан*).

Subsection 3.6. Mathematical Modeling of Technological Processes**Block 10, Room 4****14.00-18.00****16.00-16.20 Coffee break****Chair: A.J. Jainakov, Yu.N. Zakharov****Secretaries: B. Kalmurzaev, A. Valiolda****Lecturers:**

1. **Бердышев А.С.¹, Имомназаров Х.Х.², Михайлов А.А.², Султанов М.А.³** Об одной термодинамической согласованной нелинейной модели пороупругости (¹Казахский национальный университет им. аль-Фараби, Алматы, Казахстан, ²Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия, ³Еразийский национальный университет им. Л.Н. Гумилева, Астана, Казахстан)
2. **Билал Ш.** О свойствах дробной степени оператора Штурма-Лиувилля (Институт математики и математического моделирования МОН РК, Алматы, Казахстан).
3. **Биргебаев А.** Гладкость решений (разделимость) нелинейного стационарного уравнения Шредингера (Казахский национальный педагогический университет имени Абая, Алматы, Казахстан).
4. **Бондарева Л.В., Захаров Ю.Н.** Численное моделирование процесса очистки промышленных стоков в отработанных горных выработках (ГОУ ВПО Кемеровский государственный университет, Кемерово, Россия)
5. **Вьюнник Н.М., Кириченко А.А.** Численное моделирование отвода диффузионного слоя в процессе концентрирования молока ¹ГОУ ВПО Кемеровский государственный университет, Кемерово, Россия)
6. **Губарев В.В., Терехов Р.В., Пушкарева С.А.** О применимости корреляционного анализа для случайных сигналов с нелинейной регрессией (Новосибирский государственный технический университет, Новосибирск, Россия)
7. **Dairbayeva G.M.** An Inverse Problem for the Stokes Equations (Al-Farabi Kazakh National University, Almaty, Kazakhstan)
8. **Деревцов Е.Ю., Мальцева С.В., Светов И.Е.** Построение операторов индикатора неоднородности тензорных полей на основе их известных лучевых преобразований (Институт математики им. С.Л. Соболева СО РАН, Новосибирск, Россия)
9. **Дженалиев М.Т.¹, Рамазанов М.И.²** О разрешимости особого интегрального уравнения Вольтерра второго рода со спектральным параметром (¹Институт математики и математического моделирования, Алматы, Казахстан, ²Карагандинский государственный университет им. Е.А. Букетова, Караганда, Казахстан)

10. **Диарова Д.М.¹, Земцова Н.И.²** Применение компьютерной алгебры в качественном исследовании ньютоновой проблемы многих тел (¹Атырауский институт нефти и газа, Атырау, Казахстан, ²ВЦ РАН им. А.А. Дородницына, Москва, Россия)
11. **Долгов Д.А., Захаров Ю.Н.** Моделирование движения вязкой неоднородной жидкости в крупных кровеносных сосудах (Кемеровский государственный университет, Кемерово, Россия)
12. **Жайнаков А., Султангазиева Р.Т., Аманкулова Н.А.** О влиянии состава защитных газов на поведение электрической дуги и сварочной ванны (Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан)
13. **Жайнаков А.А., Султангазиева Р.Т., Медралиева Б.Н.** Численный анализ гидродинамических процессов сварочной ванны при электродуговой сварке (Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан)
14. **Жайнаков А.Ж.¹, Хикметов А.², Каржаубаев К.²** Математическое моделирование переноса нефтяной пленки на поверхности моря (¹Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан, ²Казахский национальный университет имени аль-Фараби, Алматы, Казахстан)
15. **Жапбасбаев У.К.¹, Рамазанова Г.И.¹, Саттинова З.К.², Шахов С.А.³** Процесс затвердевания шликера оксида бериллия с учетом фазового перехода (¹Казахстанско-Британский технический университет, Алматы, Казахстан, ²Евразийский национальный университет им. Л. Гумилева, Астана, Казахстан, ³Сибирский государственный университет путей сообщения, Новосибирск, Россия)
16. **Захаров Ю.Н., Иванов К.С., Гейдаров Н.А.** Численное моделирование размыва грунта у основания платформ гравитационного типа (ГОО ВПО Кемеровский государственный университет, Кемерово, Россия)
17. **Инкарбеков М.К.** Исследование фильтрованной функции плотности для моделирования крупных вихрей реагирующих турбулентных течений (Казахский национальный университет им. аль-Фараби, Алматы, Казахстан).
18. **Иркимбеков Р.А., Котов В.М., Байгожина А.А.** Характеристики переноса нейтронов в реакторе ИГР (Институт атомной энергии Национального ядерного центра Республики Казахстан, Курчатов, Казахстан)
19. **Кунакбаев Т.¹, Отелбаев М.²** К определению минимально возможного расстояния между тремя вращающимися ветротурбинами карусельного типа (¹Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, ²Евразийский национальный университет им. Л.Н. Гумилева, Астана, Казахстан).
20. **Мазаков Т.Ж., Джомартова Ш.А., Жакыпов А.Т., Турсынбай А.Т.** Критерий управляемости нелинейных динамических систем (Казахский национальный университет имени аль-Фараби, Алматы, Казахстан).

Subsection 3.7. Mathematical Modeling of Technological Processes

Block 10, Room 5

14.00-18.00

16.00-16.20 Coffee break

Chair: A.I. Khisamutdinov, N.M. Temirbekov

Secretaries: A. Kudaibergenov, Zh. Abekerimova

Lecturers:

1. **Мардонов Б.М.¹, Аманов С.С.¹, Хаджиева Л.А.²** Численное моделирование нелинейных колебательных процессов в колоннах при бурении нефтегазовых скважин (¹Ташкентский институт текстильной и легкой промышленности, Ташкент, Узбекистан, ²Казахский национальный университет им. аль-Фараби, Алматы, Казахстан)
2. **Миргаликызы Т., Муканова Б.Г.** Моделирование влияния рельефных границ при решении прямой задачи электроразведки постоянным током (Евразийский национальный университет имени Л.Н. Гумилева, Астана, Казахстан)
3. **Митин К.В., Любанова А.Ш.** Моделирование потоков ионов методом частиц (Сибирский федеральный университет, Красноярск, Россия)
4. **Мурзабеков З.Н.¹, Милош М.², Тусупова К.Б.¹** Моделирование распределения ресурсов в трехсекторной математической модели кластера (¹Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, ²Люблинский технологический университет, Люблин, Польша)
5. **Пеньковский В.И., Корсакова Н.К.** Модель гидравлического разрыва пласта на основе механики и фильтрации в гетерогенной среде (Институт гидродинамики им. М.А. Лаврентьева СО РАН, Новосибирск, Россия)
6. **Перегудин С.И., Холодова С.Е.** Редукция в исследовании крупномасштабной динамики с учетом эффектов диффузии магнитного поля (Санкт-Петербургский национальный исследовательский университет информационных технологий, механики и оптики, Санкт-Петербург, Россия)
7. **Садуллаева Ш.А., Пардаева Г.** Численное моделирование одной системы взаимной реакции-диффузии с двойной нелинейностью (Ташкентский университет информационных технологий, Ташкент, Узбекистан)
8. **Сарсенов Б.Т.** Моделирование нестационарных контактных задач динамики упругих сред (Международный казахско-турецкий университет имени Х.А. Яссави, Туркестан, Казахстан)
9. **Смагин С.И., Пономарюк Ю.Ю.** Математическое моделирование нагрева поверхностного слоя катода при электроискровом легировании (Вычислительный центр ДВО РАН, Хабаровск, Россия)

10. **Стуколов С.В.** Численное моделирование экспериментального волнопродуктора (*Кемеровский государственный университет, Кемерово, Россия*)
11. **Темирбеков Н.М., Тураров А.К.** Математическая модель двумерного осесимметричного движения газожидкостной смеси в газлифтной скважине (*Восточно-Казахстанский государственный технический университет им. Д. Серикбаева, Усть-Каменогорск, Казахстан*)
12. **Тукунова Л.М., Скакова А.Ж.** О существовании обобщенного решения модели неоднородной жидкости в магнитном поле (*Новый экономический университет имени Тура Рыскулова, Алматы, Казахстан*)
13. **Урмашев Б.А.¹, Турсынбай А.Т.¹, Жайнаков А.Ж.²** Разработка методов определения и способов расчета действительных значений основных временных параметров линейной трехкамерной фармакокинетики (*¹Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, ²Кыргызский Государственный Технический Университет им. И. Раззакова, Бишкек, Кыргызстан*)
14. **Хисамутдинов А.И.** Задачи уравнения переноса и ядерно-геофизические технологии (*Институт нефтегазовой геологии и геофизики им. А.А. Трофимука СО РАН, Новосибирск, Россия*)
15. **Хисамутдинов А.И.¹, Банзаров Б.В.², Урамаев М.Ш.¹** Комплекс программ NskMCNG для решения задач ядерно-геофизических технологий (*¹Институт нефтегазовой геологии и геофизики им. А.А. Трофимука СО РАН, Новосибирск, Россия, ²Новосибирский государственный университет, Новосибирск, Россия*)
16. **Шакенов К.К., Заманова С.К.** Численные методы решения уравнений Навье-Стокса (*Казахский национальный университет имени аль-Фараби, Алматы, Казахстан*).
17. **Шокин Ю.И., Шурина Э.П., Иткина Н.Б.** Применение неконформных конечноэлементных методов для моделирования процессов с фазовыми переходами (*Новосибирский государственный технический университет, Институт вычислительных технологий СО РАН, Новосибирск, Россия*)
18. **Яхияев Ф.К.** Математическое моделирование процесса возникновения оползневых потоков в теле плотины (дамбы) сложного неоднородного строения (*Научно-исследовательский институт математики и механики КазНУ им. аль-Фараби, Алматы, Казахстан*)

Section 5. Technological Process Automation and Control**Block 10, Room 2****14.00-18.00****16.00-16.20 Coffee break****Chair: O. I. Potaturkin, V.V. Petrovic****Secretaries: P. Omarova, G. Kaliyeva****Lecturers:**

1. **Ozhikenov K.A., Utebaev R.M., Ismagulova R.S., Ozhiken A.K., Aitzhanova G.D.** Simulation of the Control System Withdrawable Sensor Logging Stations (*Kazakh National Technical University named K.I. Satpaev, Almaty, Kazakhstan*)
2. **Pachshenko G. N.** Algorithm for construction of the intellectual control system of the object with inexact parameters and delay on the basis of artificial neural networks (*Institute of information and computing technology, Almaty, Kazakhstan*)
3. **Petrovic V.V., Grujic A., Jokic A.** Application of programmable logic controllers for efficient use of photovoltaic panels (*The School of Electrical and Computer Engineering of Applied Studies, Belgrade, Serbia*)
4. **Poleshchuk A.G., Shimansky R.** Diffractive optical elements for a quality checking of the aspherical mirrors of large telescopes (*Institute of Automation and Electrometry Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia*)
5. **Rakhimova D., Abakan M.** The problem of Word sense disambiguation in Machine Translation system of Russian-to-Kazakh languages (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
6. **Samigulina G. A., Samigulina Z.I.** Immune Network technology of complex objects control based on computing clusters using virtual machines (*Institute of Information and Computing Technologies, Almaty, Kazakhstan*)
7. **Shiryayeva O., Denisova T.** Investigation of artificially immune system with using of fuzzy logic (*Kazakh National Technical University after K. Satpaev, Almaty, Kazakhstan*)
8. **Urmashev B., Makashev Y., Omarova P. T., Dosbol U.A., Alimbayeva B.K.** Development of the computer program of foresting desertification of the territory of the North Kazakhstan region (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)
9. **Астраков С.Н., Амиргалиев Е.Н.** Задачи покрытий и упаковок в некоторых приложениях (*Новосибирский национальный исследовательский университет, Новосибирск, Россия, Казахский национальный университет им. Аль-Фараби, Алматы, Казахстан*)
10. **Волков Д.В., Епихин А.М.** Архитектура программного комплекса

интеллектуального облачного сервиса мониторинга состояния и управления для удаленных распределенных объектов (*Special Design and Technological Bureau «Nauka» Krasnoyarsk Scientific Centre of Siberian Branch Russian Academy of Sciences, Krasnoyarsk, Russia*)

11. **Гаченко А. С., Ружников Г.М., Михайлов А.А., Хмельнов А.Е.** Применение ГИС и WEB-технологий для создания геоинформационной системы "Инвестор" (*Matrosov Institute for System Dynamics and Control Theory of Siberian Branch of Russian Academy of Sciences (ISDCT SB RAS), Irkutsk, Russia*)
12. **Гронь Д.Н., Любанова А.Ш.** Моделирование и управление процессом электролитического рафинирования меди (*Сибирский федеральный университет, Красноярск, Россия*)
13. **Жантаев Ж.Ш., Жумабаев Б.Т., Николаевский Н.Ф., Крякунова О.Н., Малимбаев А.** Организация центра сбора экспериментальных геофизических данных в реальном времени для исследования ближнего космоса (*ДТОО "Институт ионосферы", Алматы, Казахстан*)
14. **Смагин С.И., Сорокин А.А.** Развитие информационно-телекоммуникационных и вычислительных ресурсов для работы с научными данными на Дальнем Востоке России (*Вычислительный центр ДВО РАН, Красноярск, Россия*)